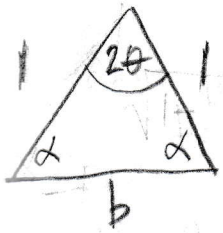
(28) Prove the formula $\sin 2\theta = 2\sin\theta\cos\theta$ for $0° < \theta < 90°$ by following the pattern for Exercise 27, but using the law of sines.

$$\alpha = \frac{180° - 2\theta}{2} = 90° - \theta$$

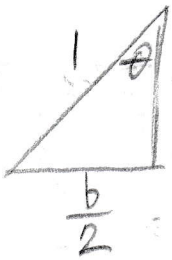


(1) using the law of sines,

$$\frac{\sin(2\theta)}{b} = \frac{\sin(90° - \theta)}{1} = \cos\theta$$

$$\sin(2\theta) = b\cos\theta$$

(2) by first finding $\frac{b}{2}$:



$\sin\theta = \frac{b}{2}$

$\therefore b = 2\sin\theta$

Substituting $2\sin\theta$ for b in part (1):

$$\sin(2\theta) = 2\sin\theta\cos\theta$$